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NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
55 Centre St., London, Ontario N6J 1T4
(519) 675-7742; Fax: 675-7777

January/February 1998 98-1/2

Dana Poulton of D.R. Poulton & Associates will be speaking on ***Archaeology in the Park: Recent Investigations in Victoria Park***, March 12 at the London Museum of Archaeology. This talk presents results of background research and field survey of Victoria Park: London's oldest public park and the site of the Framed Infantry Barracks (1840-1869).

The speaker for the April 9 meeting will be Don Simons. Don has kindly agreed to travel from his home in Michigan to keep us up to date on investigations at the Gainey and Butler Paleo-Indian sites.

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As always, we will meet at the London Museum of Archaeology (1600 Attawandaron Road, near the corner of Wonderland & Fanshawe Park Road, in the northwest end of the city) at 8 P.M.

ANNUAL RATES

Individual	$18.00
Student	$15.00
Institutional	$21.00
Subscriber	$20.00

Chapter Executive

EXECUTIVE REPORT

Well, with such a mild winter various Chapter members have found themselves out in the field in February and even January, no doubt generating the raw material for many new KEWA articles! However things have been a little quieter here at Chapter headquarters. Copies of Adder Orchard and Deeds/Nations continue to go out the door, despite almost no advertising efforts on the part of the Chapter (certainly a task we'd welcome help with!).

But, even as the ink is still drying on Adder Orchard (not really, but go with the illusion!), we've taken the next Occasional Publication (#7) to the printers. This will be the long awaited report by Ron Williamson and the rest of the Archaeological Services Inc. gang, detailing the excavations of the Myers Road site, an Early to Middle Iroquoian site in Cambridge. This detailed report will be available by the end of March, going for the great price of $20.00 (plus the usual). An order form will be included in next month's issue of KEWA.

SOCIAL REPORT

Well last month's member's night was a big success, and proved to be a very interesting slate of speakers. So interesting, in fact, that the evening's billing enticed members from as far away as Toronto to attend (glad the weather held!). Thanks to Harri, Peter, Dave and Chris for making the evening long and enjoyable.

Also, it appears that the recent decision to stop providing coffee at speaker nights (due to the hassle of getting the coffee prepared) has been received with some support and little revolt. Most people say they prefer the "healthier" juice option...just so long as those cookies don't disappear!

Finally, Sue Kenyon recently donated some more books to the chapter. This load contains a number of federal and provincial publications (various duplicates of stuff she has), some Ontario History journals, and a pretty close to complete range of OA and Arch Notes from the late '70's on. All, again, are going for a dollar a text on a first come-first served basis, so feel free to drop by 55 Centre Street and browse (call ahead to make sure someone's here).

EDITOR'S REPORT

We start off the 1998 year - our 22nd year of existence - with a special double issue. Neal Ferris provides us with a report on the Milton Heights ossuary artifact collection, and offers some insights on how to recover meaningful data from such sites within the current political realities we all face. Sure glad I didn't have the job of measuring all those shell beads!

This double issue means that, incredibly, **we are now up to date with KEWA mailings**! And while those of us in the editorial shop get to relax and enjoy the fruits of our labours - for a week or two anyways - let us remind you all that our ability to keep providing you with KEWA on time depends on receiving articles from you to use in the newsletter. Our cupboard is nearly bare, so please consider working up an old site report, review, or course paper and firing it in to the newsletter, we, as always promise near immediate publication!

THE MILTON HEIGHTS SITE:
ARTIFACT ANALYSIS OF A SEVENTEENTH CENTURY NEUTRAL OSSUARY PIT

Neal Ferris

INTRODUCTION

The Milton Heights site (AjGx-44) - also known as the Gaetan site (so named for the landowners of the property) - is situated below the Niagara Escarpment in the Town of Milton. The site is located on a small terrace, immediately north of Sixteen Mile Creek (Oakville Creek; Figure 1). Milton Heights consists of a single, large ossuary pit, and some peripheral, individual burials. No habitation is known for this cemetery, although rumours of a possible candidate no more than 500 metres to the southwest of the site at the main intersection of the village of Milton Heights was apparently investigated by Wm. Finlayson, who is supposed to have noted a few microsherds from a hedgerow there (P. Carruthers, pers. comm.).

The Milton Heights site was investigated by Peter Carruthers of the Ministry of Citizenship, Culture & Recreation (nee Citizenship & Culture) during the spring, and again in the summer of 1986, after the excavation of a single house foundation exposed a large portion of an ossuary pit. Mr. Carruthers noted the presence of a large number of human remains, a quantity of European trade goods, and a second, peripheral burial exposed in the construction pit. For a number of reasons, a delay of over 2 months ensued before full rescue excavations could commence, which had the unfortunate effect of allowing large portions of the burial pit fill to erode down the side of the foundation hole. Carruthers eventually began excavations on July 1st, and continued over the next seven days. The field crew consisted primarily of Ministry staff (full time and seasonal), and augmented in no small measure by OAS volunteers and members of the public.

Following the excavations, negotiations with the landowner, Six Nations and the Ministry continued regarding the disposition of the materials recovered, and ultimate fate of the burial locality. Mr. Gaetan eventually agreed to build his house away from the known limit of the cemetery, while the burial area was formally registered on title as a cemetery. As well, the Six Nations representatives insisted that all recovered human and artifact remains be re-interred. This was agreed to, and a month's grace was provided to allow for the analysis of all remains before re-interment.

Dr. Jerry Melbye of the University of Toronto was contracted to analyse the human remains from the site (Melbye et al 1987), while I was awarded the analysis of the artifacts (Ferris 1987). Since the remains were to be re-interred, I had the rather substantial task of ensuring all artifacts were measured, analysed, photographed and catalogued. In addition, close to 1300 litres of heavy, clay, erosional washout had been bagged for flotation to be processed. All this had to occur in less than a month's worth of time. With no time left to spare, the task was accomplished.

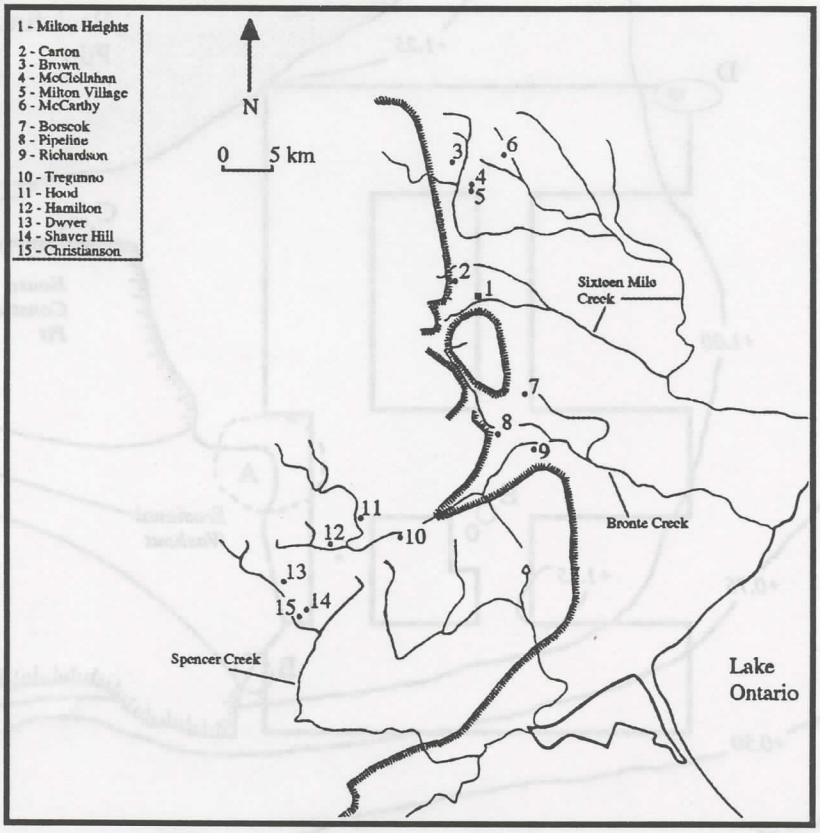

Figure 1: Historic Neutral Sites in the Region of Milton Heights and referred to in text. The solid line and series of slashes depict the Niagara Escarpment.

EXCAVATIONS

No formal excavation report has been generated for the salvage work conducted at Milton Heights. However, based on recollections and Carruthers' field notes and photographic record, the following is offered as a summary of the 1987 field work, in order to provide some context for the subsequent artifact analysis.

According to Carruthers, the intent of the excavations was to a) define the extent of the cemetery; b) recover all human remains and burial goods in backdirt piles or in the erosional washout; and c) document as best as possible the main ossuary pit, under the proviso agreed to through discussions with Six Nations representatives that intact portions of the pit were to remain undisturbed.

In order to define the extent of the cemetery, Carruthers directed a number of test trenches be exposed adjacent to the ossuary pit, to identify other burial localities. Working around the large backdirt piles from the house excavation, and staying on the Gaetan property, meant that excavated areas were located to the west and south of the ossuary pit (Figure 2). In all, two single interments (Peripheral Burial 1 and 2) and two possible interment localities were noted.

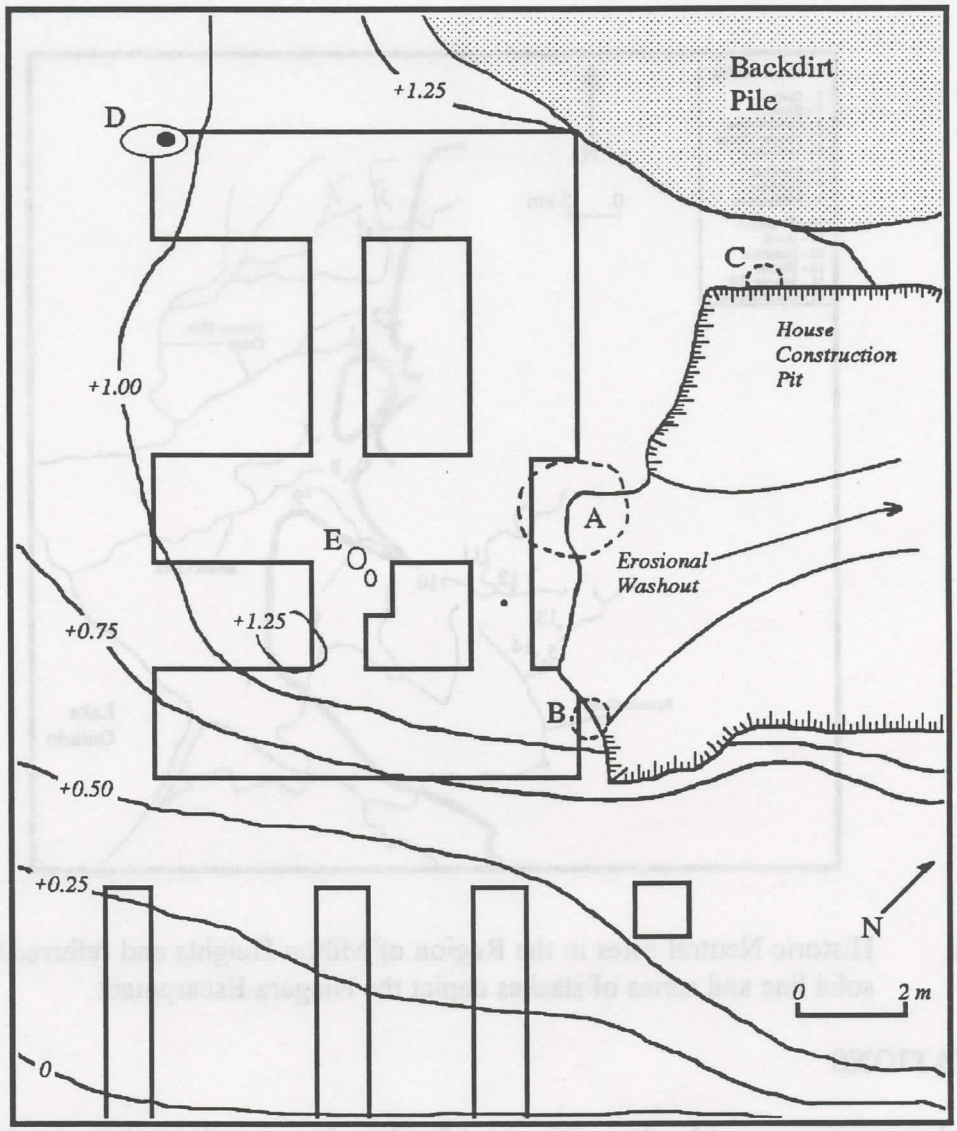

Figure 2: Excavations of the Milton Heights Site (A- ossuary pit; B- peripheral burial 1; C- peripheral burial 2; D- rock pit with bone splinters; E- bone clusters).

The two peripheral burials were exposed in the wall of the house foundation (Figure 2: B&C). Peripheral Burial 1 was mostly eroded into the construction pit by the time that rescue work began in July. However, enough intact and slumped material was recovered for subsequent lab analysis to determine that the burial contained a single young male (15-21 years at death), who had been placed in a tightly flexed position when buried (Mullen 1987). Peripheral Burial 2 was discovered approximately 4 metres to the north of the ossuary pit. Also visible in the exposed face of the house excavations, this pit had been missed by heavy machinery, and had barely been exposed by soil erosion. Other than to record its location, no work was done on this burial.

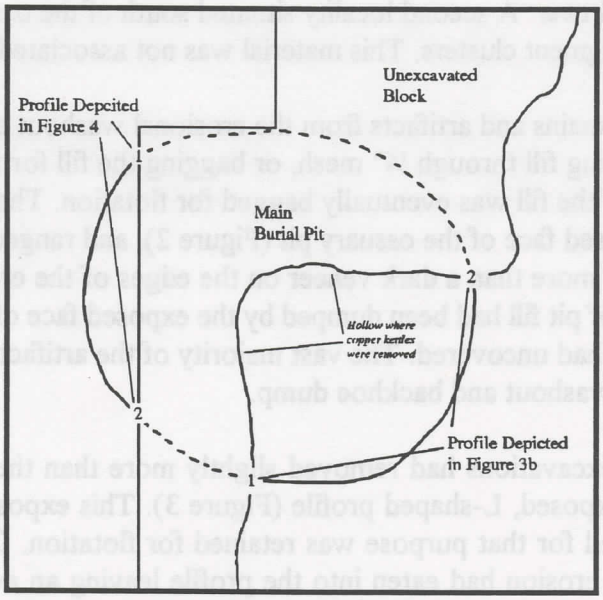

Figure 3a: Detailed Plan of the Main Ossuary Pit at Milton Heights, Depicting Location of The Two Profiles recorded (Figures 3b and 4).

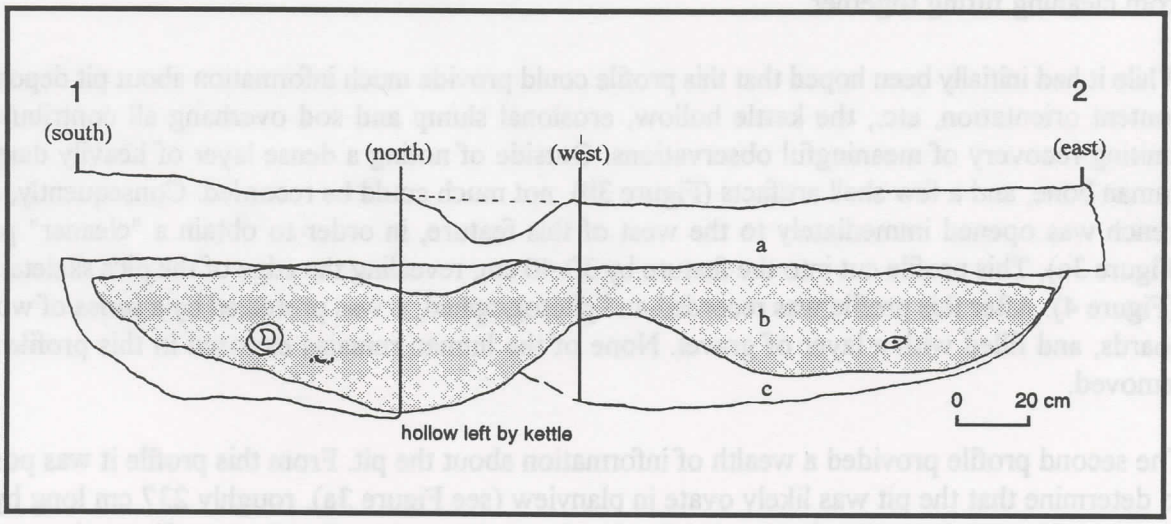

Figure 3b: L-Shaped Profile of the Main Burial Pit Exposed by Construction. Level a - topsoil; Level b – solid concentration of human bone; Level c – pit fill. From left to right, note the face of a cut shell whelk, string of shell beads and shell pendant visible in Level b.

Two burial localities were noted in the trenches to the south and west of the ossuary pit (Figure 2: D&E). The first of these was found to the west, and consisted of a small pit filled with rocks. Apparently interspersed among these rocks were small fragments of human bone. This feature was

recorded and then covered over. A second locality situated south of the ossuary pit consisted of two small bone splinter and fragment clusters. This material was not associated with any kind of feature.

The recovery of human remains and artifacts from the erosional washout consisted of establishing a grid over this area, screening fill through ¼" mesh, or bagging the fill for flotation; given the heavy nature of the soil, most of the fill was eventually bagged for flotation. The washout extended some ways down from the exposed face of the ossuary pit (Figure 2), and ranged in depth between 15 cm just below the pit, to little more than a dark veneer on the edges of the erosional path. In addition, part of a backhoe bucket of pit fill had been dumped by the exposed face of the ossuary pit, once the operator realised what he had uncovered. The vast majority of the artifacts recovered and analysed came from this erosional washout and backhoe dump.

Initial house foundation excavations had removed slightly more than the eastern quadrant of the ossuary pit, creating an exposed, L-shaped profile (Figure 3). This exposure face was cleaned for mapping, and soil removed for that purpose was retained for flotation. Cleaning this face proved difficult not only because erosion had eaten into the profile leaving an awkward sod overhang to contend with, but also because a number of large kettles had fallen from the centre of the pit during construction, leaving a depression or hollow in the centre of the exposed profile. Thus, while this hollow actually provided some contextual information with respect to the kettles recovered, it left an inward slope of 20+ cm at the centre of the profile that prohibited the two sections of pit profiles from cleaning fitting together.

While it had initially been hoped that this profile could provide much information about pit deposition, content orientation, etc., the kettle hollow, erosional slump and sod overhang all contributed to limiting recovery of meaningful observations. Outside of noting a dense layer of heavily damaged human bone, and a few shell artifacts (Figure 3b), not much could be recorded. Consequently, a test trench was opened immediately to the west of this feature, in order to obtain a "cleaner" profile (Figure 3a). This profile cut into the feature by 30-40 cm, revealing the edge of the pit's skeletal layer (Figure 4). After this profile was recorded and photographed, it was protected by a series of wooden boards, and filled with a layer of gravel. None of the human remains exposed in this profile were removed.

The second profile provided a wealth of information about the pit. From this profile it was possible to determine that the pit was likely ovate in planview (see Figure 3a), roughly 237 cm long by 204 cm wide. The maximum depth recorded for the pit was 57 cm (the disturbed profile maximum depth was 60 cm), and the pit profile was basin-shaped.

Additionally, the controlled profile of the ossuary pit revealed a great deal about the history of deposition. The bottom layer consisted of a thin mixture of topsoil and clay subsoil, likely the result of the actual excavation of the pit. The concentration of human remains rests on this layer, itself covered by a loam subsoil (likely the pit fill thrown back into the pit). This suggests, to no surprise, that the internment was a single event. Also, the human bone placement suggests a re-deposition, since there is little evidence of skeletal articulation. Indeed, there appears to be an orderly placement

of remains, as seen by the presence of 3 crania in the centre of the pit (including one lying upside down with a slab of stone resting atop it). And from this centre area extends a series of long bones, including a femur that may be articulated to a pelvic or innominate bone part the southerly (right hand) end of the profile. This orderly arrangement of long bones and skulls has also been noted in other ossuary pits (e.g. Graves 9, 11 and 62 at the Grimsby site; W. Kenyon 1982).

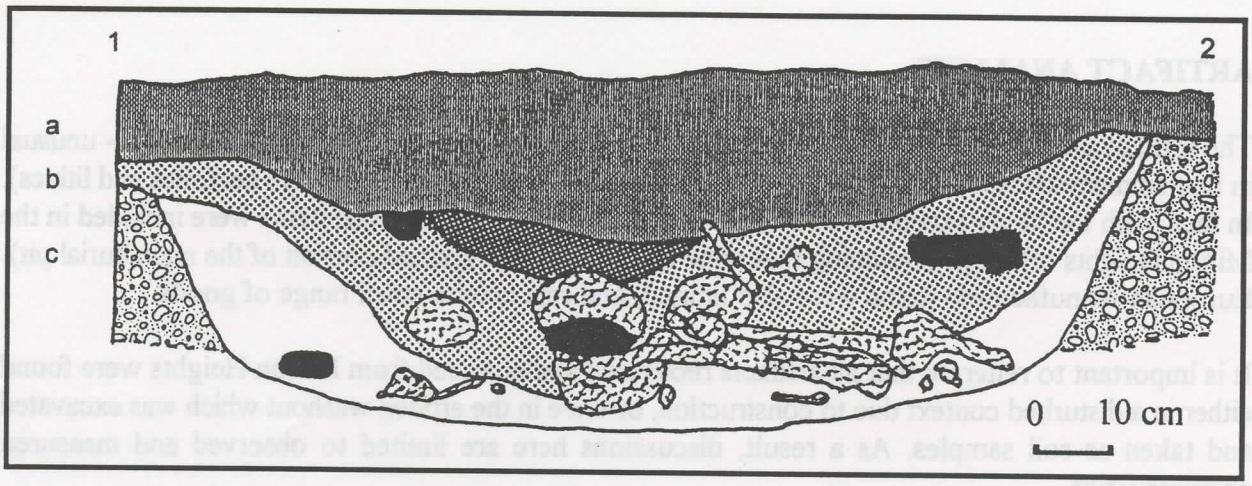

Figure 4: Controlled Exposure Profile of the Main Burial Pit (refer to Figure 3a for orientation). Level a - dark brown topsoil; Level b - light brown topsoil; Level c - topsoil/subsoil mottle. Note the black topsoil lens in the centre of the pit between Levels a and b. Solid back areas depict stones visible in the profile. Human bone is individually mapped, and depicts the edge of the bone deposit as noted in the Figure 3b profile. This profile is based on a sketch map made by the author.

An interesting feature in the profile was a black topsoil lens immediately above the bone and subsoil fill of the pit. While this lens was a densely packed and rich black soil, there was no evidence (i.e. fired soil, burnt bone, or charcoal) to suggest this lens was the result of fire. Rather, the soil had the texture of rich organic decay, comparable to midden soil matrix. No clear function can be given for this lens, however, considering its location and the fact that this profile is really just the outer edge of the pit, it may be that this lens represents the beginning (or lip) of an internal pit located in the centre of the feature. Certainly eyewitness accounts of the initial impact to the burial pit note that a series of kettles uncovered during construction came from the centre of the pit. Furthermore, on one of these kettles was the preserved portion of a hide or pelt, covered with a host of larvae casings. Given that the black soil lens occurred in the feature after skeletal remains had been placed in the pit and covered with soil, perhaps the kettles and hide represented part of a larger, centre of pit offering including a great deal of organic material (e.g. food, hides, etc.). This would certainly explain the rich soil deposit in this lens, and a central offering would be consistent with such a pattern observed on other Neutral Iroquoian cemetery sites (e.g. Jamieson 1981: 24; W. Kenyon 1982).

The work on the recovered skeletal remains from the ossuary pit conducted prior to re-burial offers some limited insight into the pit's population (Melbye et al 1987). A maximum number of individuals present in the pit is placed at 38, although it is suggested that the average number of complete individuals is closer to 21 (Melbye et al 1987: 74). Sex ratio estimates are roughly equal (i.e. 1:1), while age estimates, based on dentition, suggest that 42% of the population was 20-25 years of age, and 30% were below 20 years - a subadult/adult ratio similar to other Ontario Iroquoian populations (Melbye et al 1987: 73-74).

ARTIFACT ANALYSIS

The artifact assemblages from Milton Heights constituted an unusual assemblage of items - unusual in that so many classes of artifacts were absent from the assemblage (i.e. Native ceramics and lithics). In fact, with the likely exception of a turtle-shell rattle, no locally derived items were included in the Milton Heights offerings (assuming that none exist in the unexamined portion of the main burial pit). European-manufactured items were also limited, and represent a small range of goods.

It is important to reiterate that all artifacts recovered and analysed from Milton Heights were found either in a disturbed context due to construction, or were in the eroded washout which was excavated and taken as soil samples. As a result, discussions here are limited to observed and measured characteristics.

European-Manufactured Items

Copper Kettles

Two identical, large copper kettles were recovered, exposed during initial construction damage to the main burial pit. While one of the kettles was fairly intact, the other was too twisted and torn from construction impact to provide accurate measurements. These kettles were basin-shaped, with slightly inward-angled sides and slightly convex bases (Figure 5). They were hammer-made, characterised by rings of small, circular hammer depressions along their sides. The base of each kettle had a series of 13 raised rings, extending out to a maximum base diameter of 56 cm. The intact kettle stood approximately 28 cm high. Both kettles had a flared lip, extending outwards 2 cm at a 90°angle. The lip consisted of one fold of copper, and on the interior edge of the lip was a row of incised, irregularly spaced notches. The maximum top diameter of the complete kettle was 68 cm.

Handle lugs on the kettles were unusual in relation to the more typical kettle lugs found on historic Neutral sites. Each kettle had two lugs, the main portion of which was a 2 cm thick band of iron, 51 cm long and 4 to 5 cm wide, attached to the side of the kettle by 3 bolts. The lug was attached to the kettle immediately below the kettle lip, providing a hole or slot for the edge of an iron handle to fit in. The height of the lug from the top of this slot to the base was 11 cm. The slot portion of each lug was 2 cm thick by 7 cm wide, and the slot had a 2 cm diameter. The handle consisted of a single piece of iron, 2.13 cm wide by 1 cm thick. The main portion of the handle was curved, with either end

flared. The flared portion of each end was 6 cm long, while the "J" loop base (the portion of the handle that sat in the lug), was 4.78 cm long. The length of the handle from end to end was 87 cm, 65 cm from the base of one "J" loop to the other.

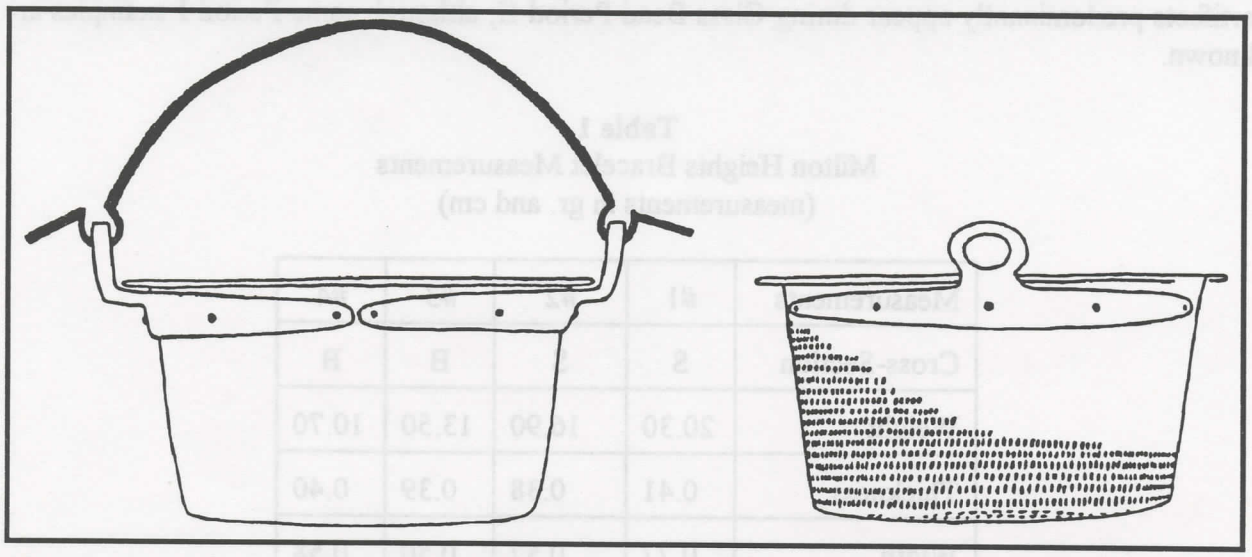

Figure 5: Illustration of an Iron Band or Strap Copper Kettle, Similar to That Found at Milton Heights. Graphic adapted from Fitzgerald 1990.

Only one other example of this type of iron band or strap kettle has been recovered from a Neutral cemetery, from Grave 11 of the Grimsby cemetery (W. Kenyon 1982: 67; Plate 57 & 58, kettle b). Fitzgerald (1988; 1990), has argued that these kettles are an early trade good (Glass Bead Period I (GBPI): late 16th century), based on their association with GBPI beads from Micmac contexts in Nova Scotia, and the fact that their relatively high manufacturing quality pre-dates the commercialisation of the European fur trade.

Copper Bracelets & Finger Ring

Four copper bracelets were recovered during the initial April salvage work, one of which was in two pieces. The bracelets are all made from single sheets of copper, rolled into two tubes. Two bracelets were rolled into the centre of the strip of copper, creating a "B" shaped cross-section, while two were rolled outwards and more tightly, creating a "S" shaped cross-section. These latter two bracelets tended to be more circular in shape and heavier (probably because a wider strip of copper had to be used for this method), while the "B" shaped bracelets were more oval in form. The ends of all four bracelets were either cut and pinched, or bent and folded over, creating a tapered end.

Similar bracelets have been found on other Neutral cemeteries and habitation sites (Fitzgerald 1982a: 223-224, Figures 36, 58 & 59; W. Kenyon 1982: 215, Plate 202; Lennox 1981: 325, Figure 47:10, 1984: 110-111, Figure 57: 20; Reid & Conway 1976: 32; Ridley 1961: 19, Plate 6). Most of these, as can be determined from reports, are "B" shaped in cross-section, with the exception of one "S"

shaped example from Christianson (Fitzgerald 1982a). Fitzgerald has suggested that the tight and uniform rolling of these bracelets may reflect a European as opposed to Native manufacture (1982a: 224-225), but has subsequently suggested that these objects simply reflect increased Native skill at manipulating strips of metal obtained through trade (1990: 509). He has also suggested that these artifacts predominantly appear during Glass Bead Period II, although some Period I examples are known.

Table 1
Milton Heights Bracelet Measurements
(measurements in gr. and cm)

Measurements	#1	#2	#3	#4
Cross-Section	S	S	B	B
Weight	20.30	16.90	13.50	10.70
Thickness	0.41	0.38	0.39	0.40
Width	0.77	0.57	0.50	0.58
Diameter	6.31	4.83	Na	Na
Oval Length	Na	Na	4.78	4.49
Oval Width	Na	Na	4.52	3.58
Bracelet Length	18.21	22.40*	20.81	12.93

* measurements based on two fragments

A single copper ring was found at Milton Heights, still attached to finger bones. Only measurements were taken that could be made without removing the ring. The ring was made from a single, thin piece of copper, tightly coiled together three times. It had a diameter of 2.15 cm, and was 0.21 cm thick. Its width was approximately 1 cm. While similar metal forms are reported from other Neutral sites (e.g. Lennox 1981), metal sheet rings occur more frequently elsewhere (Fitzgerald 1990: 505).

Brass Basin

A large portion of a brass basin was recovered from the site, along with several fragments from the same vessel. It was basin -shaped, with a relatively flat bottom, and rounded, slightly inward-sloping sides. It stood 19.6 cm high, and had a flared lip, the end of which was curled around a piece of supporting iron wire (Figure 6). Thickness of the lip was 1.2 cm. The base diameter was approximately 15-16 cm, and diameter from lip edge to lip edge was 25-27 cm.

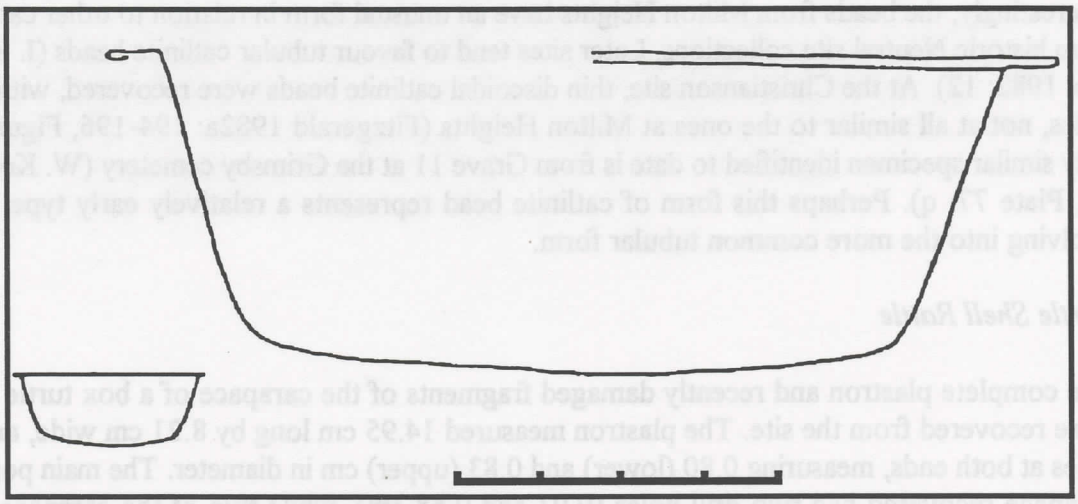

Figure 6: Cross-Sectional View of the Brass Basin From Milton Heights. Illustration provided courtesy of William Fitzgerald.

No other example of this type of vessel has been identified from other Neutral sites. However, at sites such as Hood fragments from brass vessels with a similar rim support structure have been recovered (Lennox 1984: 107).

Glass Beads

Four glass beads were recovered from Milton Heights, three from floated soil samples of the erosional washout. All four beads were the IIIk3 star bead variety (I. Kenyon and T. Kenyon 1983: 66). Unfortunately, this variety is common throughout most of the historic period, and thus is of little chronological value.

Native Manufactured Items

Catlinite Beads

Three catlinite beads were recovered from the general area of the main burial pit. One of the beads ended up in the osteological collections, and thus could not be measured. These beads were small, thick, and discoidal in shape, and for the two specimens available, exhibited variable measurements (Length = 0.58 & 0.41 cm; Width = 0. 78 & 0.69 cm; Bore Diameter = 0.30 & 0.19 cm).

Catlinite is an exotic material in historic Neutralia, originating in western Minnesota. Samples found on Neutral sites are though to have come by way of the Petun, located further to the north near present day Collingwood. In turn, the Petun obtained catlinite from the Odawa, an Algonquian speaking people who travelled extensively over the north shore of Lake Huron (Fox 1980: 96, 1990). Fox has argued that the start of this trade, or at least its appearance in Neutralia, is sometime between 1615-1620 (1980: 93).

Interestingly, the beads from Milton Heights have an unusual form in relation to other catlinite beads from historic Neutral site collections. Later sites tend to favour tubular catlinite beads (I. Kenyon and Fox 1982: 12). At the Christianson site, thin discoidal catlinite beads were recovered, with small bore holes, not at all similar to the ones at Milton Heights (Fitzgerald 1982a: 194-196, Figure 53). The only similar specimen identified to date is from Grave 11 at the Grimsby cemetery (W. Kenyon 1982: 76, Plate 77: q). Perhaps this form of catlinite bead represents a relatively early type, eventually evolving into the more common tubular form.

Turtle Shell Rattle

The complete plastron and recently damaged fragments of the carapace of a box turtle shell rattle were recovered from the site. The plastron measured 14.95 cm long by 8.21 cm wide, and had drill holes at both ends, measuring 0.80 (lower) and 0.83 (upper) cm in diameter. The main portion of the carapace recovered had two drill holes (0.93 and 0.68 cm), while two of the carapace fragments exhibited drill holes (0.85 cm and 0.72 cm). All drill hole diameters were taken from the shell exterior.

Similar box turtle rattles have been found on a number of Neutral sites (e.g. Fitzgerald 1982a: 207; Ridley, 1961: 17, 32; Wright 1981: 103). In addition, box turtle rattles have been excavated from the early Seneca sites of Dutch Hollow (Ritchie 1954: 27, Plate 10), and Kleis (White 1967: 14). Ritchie (1954: 64) argued that the use of box turtles is a precursor to the later Iroquoian preference for snapping turtle shell rattles, however a snapping turtle rattle was recovered from the 16th century Lawson site in London (Smith 1986: 6).

Shell Artifacts

The predominant artifact raw material from the Milton Heights site was, without a doubt, marine shell. Over 99% of all artifacts were made from shell. The importation of shell, either as whelks or as finished products, (e.g. beads, gorgets, pendants, etc.), is a manifestation of an inter-Native trade network which the Neutrals were clearly a part of (as are the catlinite beads and European trade goods). Intensive trade in marine shell appears to have occurred in the 16th century, increasing dramatically between 1550 and 1620 (Lennox and Fitzgerald 1990: 429-431; Noble 1978: 160).

An increase in the amount of marine shell and shell artifacts on Neutral sites around the end of the 16th century is seen to be an indicator of increased trade relations to the south (Fitzgerald 1982a: 211; Jamieson 1981: 24; Prevec and Noble 1983: 47). Of note, Lennox and Fitzgerald point out (1990: 431) that the paucity of such items on contemporary New York Iroquoian sites would imply that these trade relations by-passed or excluded those communities. However, Sempowski does observe (1989: 89) that western Seneca sites appear to contain appreciably higher percents of trade goods, including marine shell, than that observed for eastern Seneca sites (see also Wray et al 1987, 1991). This may suggest some linkage of the western Seneca into the trade network bringing marine shell into Neutralia. Regardless of the particulars, it does appear that marine shell is being imported into the Neutral territory initially prior to European contact, and by the early 17th century was arriving in relatively substantial quantities.

Marine Shell Whelks:

At least two shell whelks were a part of the Milton Heights grave offerings. One was only observable in the face of the construction-exposed profile of the main burial pit, and was not removed. However, some observations could be made. The face of the whelk measured 12 cm by 9 cm in width and height, and it appeared as though the central interior column of the shell, the columella, had been removed. The whelk was lying on its side in the pit, and seemed to be filled with bones (i.e. hand and foot bones), perhaps being used as a container for these small bones which are commonly lost during the reinterment process.

A second whelk, mostly intact, was recovered from the initial exposure of the ossuary pit. It measured 24 cm in length and weighed 847 grams. Its face measured 14 cm wide by 11 cm wide. In plan the shell was roughly triangular in shape. Its width below the face was 9.21 cm, tapering to 4.5 cm half way down the length of specimen, with the outer body whorl, and thus the main opening to the interior of the shell, measuring an additional 8.4 cm at this point.

Two drill holes were evident, although only one had fully perforated the shell. The complete hole measured 0.24 cm in diameter, and was located near the base of the body whorl. There is a degree of wear visible on the hole that suggests the shell was suspended upside down at some point. The exterior portion of the columella on the inside of the shell had been slightly modified by a series of seven notches or incised cuts, occurring close together and well down the columella shaft. At the end of the columella was a small area of copper staining, likely due to the shell resting against a copper object in the burial pit.

The columella of this shell had a tapering "S" twist, characteristic of sinistrally whorled whelks. While "S" shaped columellae are used to distinguish whelk species from those having "Z" shaped columellae, it is often believed that "S" shaped specimens generally belong to the Lightning whelk species. However, the recent refinement of whelk classification reviewed by Pendergast (1989) suggest that the Milton Heights' specimens are actually Snow whelks (*Busycon laeostomum*), characterised by the gentle swirling "S" shape of the columella, a lack of pronounced spikes along the edge of its face, and no mid-whorl bump (Pendergast 1989: 104; see Figure 7). This distinction between Snow whelks and Lightning whelks is critical. While Lightning whelks are believed to range along most of the Atlantic coast as far south as Breton Sound, Snow whelks had a much more restricted range, extending from the New Jersey coast to Virginia, and centred around Chesapeake Bay (Pendergast 1989: 107). From this locale Snow whelks would then have been easily available to local Chesapeake Bay Native groups, who regularly traded with the Andaste (Susquehannocks), often believed to the principal trading partner responsible for bringing marine shell into Neutralia (Jamieson 1981; Pendergast 1989; Prevec and Noble 1983: 47).

Snow whelks have been identified from a wide number of Neutral sites and artifact collections (Pendergast 1989: 99). They are predominantly known from burial contexts, such as the Grimsby site (W. Kenyon 1982: 159). Its not clear, however, whether intact whelks served a particular function (eg. cups or trumpets as suggested by Wintemberg 1908: 61), were restricted in use to grave goods,

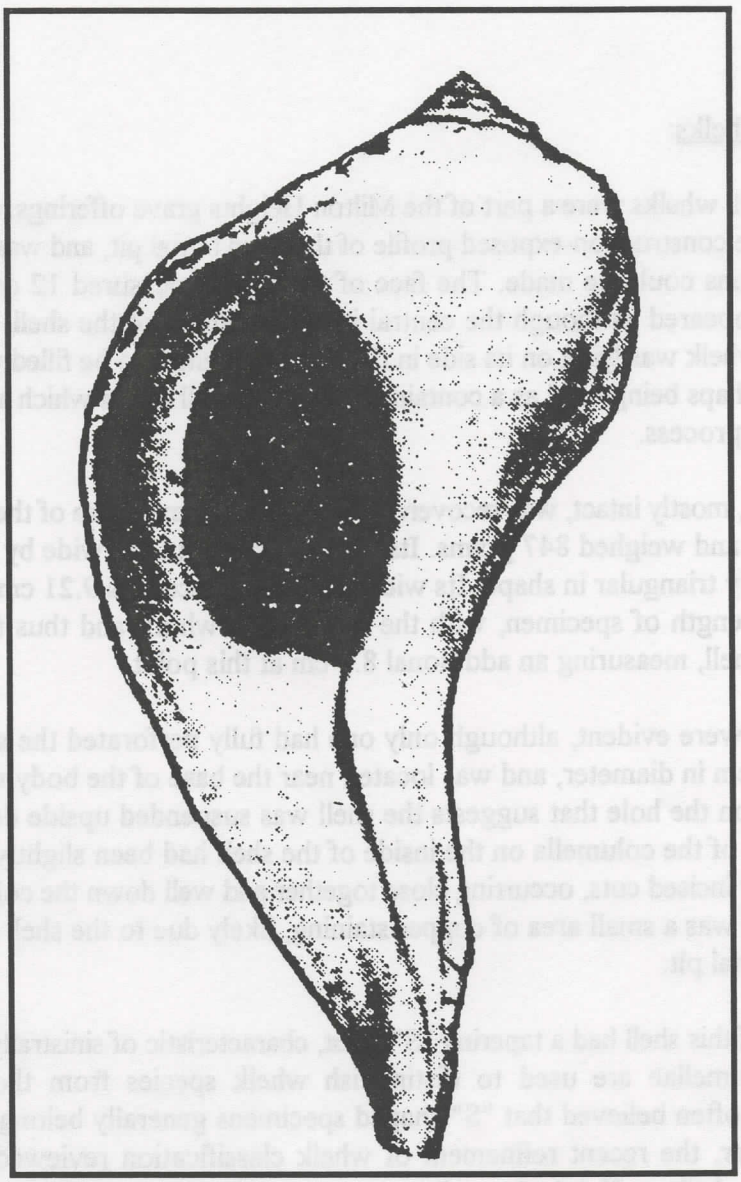

Figure 7: Snow Whelk (*Busycon laeostomum*). Adapted from Pendergast (1989: Figure 1).

or were mostly used as raw material for the production of other shell artifacts (Prevec and Noble 1983: 49). Notable by their absence, though, are large quantities of marine shell waste on Neutral habitation sites (e.g. Fitzgerald 1982a; Lennox 1981, 1984; Wright 1981), which would be expected if whelks were in fact being traded into Neutral territory, and only once in the hands of local artisans actually converted into beads, pendants, gorgets, etc.

Finally, it is worth noting that a whelk recovered from the Tregunno cemetery (I. Kenyon 1986: 9), although a *Busycon carica*, exhibited three cut lines in the same location of the columella as the seven cut lines noted on the second Milton heights example.

Marine Shell Gorgets:

Two gorgets were recovered from the main burial pit with an additional, third gorget noted in the construction-exposed profile of the burial pit. The two recovered gorgets are triangular in form, each manufactured from the outside body-whorl portion of a Snow whelk.

Table 2
Milton Heights Marine Shell Gorget Measurements
(measurements in gr and cm)

		Width			Thickness			Drill Hole Data*					
#	length	top	mid	bot.	top	mid	bot.	ri	ro	li	lo	ihw	weight
1	22.5	17.3	12.4	4.0	.76	1.35	.34	.67	.34	.57	.38	5.2	516.7
2	15.9	12.0	11.0	3.0	.20	0.63	.29	.33	.31	.44	.42	3.3	102.0

* determination of right and left drill holes made by looking at the outside of the gorget
(ri = right inside; ro = right outside; li = left inside; lo = left outside; ihw = inter-hole width)

The first gorget is from a large whelk. Two holes were drilled from the inside out. cut marks along that portion of the gorget attached to the body of the whelk suggest the cut line was scoured into the shell, then snapped off. No other modifications are evident. The second gorget is from a much smaller whelk. The gorget was detached in a similar manner, and holes were drilled from the inside out. The top, exterior of this gorget is marked by an 18 cm long horizontal line, placed about half a centimetre in from the edge of the specimen. This space is filled by a series of short, closely spaced vertical lines. As well, a 2.4 cm thick piece of the right top of the gorget had been cut out, apparently subsequent to the placing of the incised decoration.

While the incised gorget does not appear to have a recorded counterpart in existing collections, the general triangular shape of these gorgets, and presence of two drill holes, are relatively common on Neutral sites. Ridley documents similar gorgets from the Walker site and Daniels ossuary (1961: 19). At Grimsby a similar gorget was found in Grave 11, and three more came from the miscellaneous specimens collection for the site (W. Kenyon 1982: 72, 216-218). Wintemberg (1908: 55) also illustrates a similar example from North Cayuga Twp. in Haldimand-Norfolk (Plate 15: b).

Marine Shell Pendant:

A long, narrow pendant was recovered from the main burial pit (Figure 8). Based on the curvature of the pendant and the exposed shell layering visible on the piece, it is probable that the piece was manufactured from a portion of the outside body whorl of a whelk. The specimen was heavily polished, measuring 6.66 cm long and .43 cm thick. It has a small bulb at one end, notched at the base. At the other end the pendant flares out and then comes to a point. The width of the bulb was

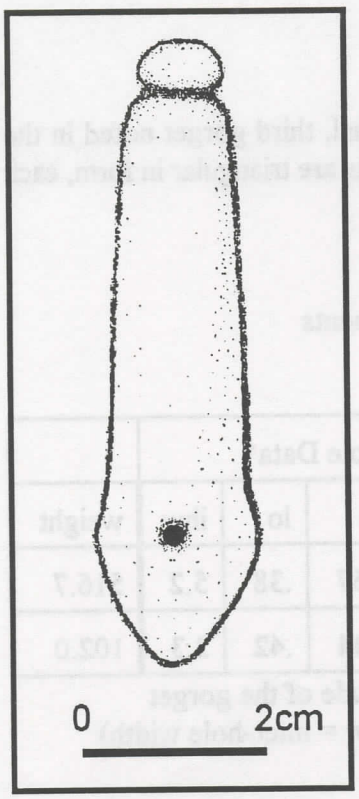

Figure 8: Shell Pendant From Milton Heights

0.89 cm; the width of the main length of the pendant was 1.38 cm; the width of the flared, pointed end of the pendant was 1.70 cm. A small hole was drilled into the pendant at the widest point of the flared end, and measured 0.21 cm in diameter. There does not appear to any wear around the hole. However, the notched area at the base of the bulb appears to have been used to wrap a thong or cord around it, presumably to hang the pendant from a necklace or other such item. While no exact duplicate of this pendant has been documented elsewhere within Neutral artifact collections, a long, narrow pendant made from the outside body whorl of a whelk was recovered from Grave 11 of the Grimsby site (W. Kenyon 1982: 75).

Columella Ornaments:

Two long, polished pieces of columella were recovered from the main burial pit. Both were slightly curved with biconically drilled suspension holes on either end. These holes were drilled from each side of the piece, although at one end of one of the specimens a suspension hole was drilled in from the end of the piece, connecting with another hole drilled in from the side. Three similar specimens were found from Grave 11 at the Grimsby site (W. Kenyon 1982: 75, Plate 74). Wintemberg also illustrates an unfinished example from Beverly Township (1908: 49, Plate IX: h). It has been suggested that these ornaments were worn on the forehead or made up part of a more elaborate head dress (Wintemberg 1908: 64).

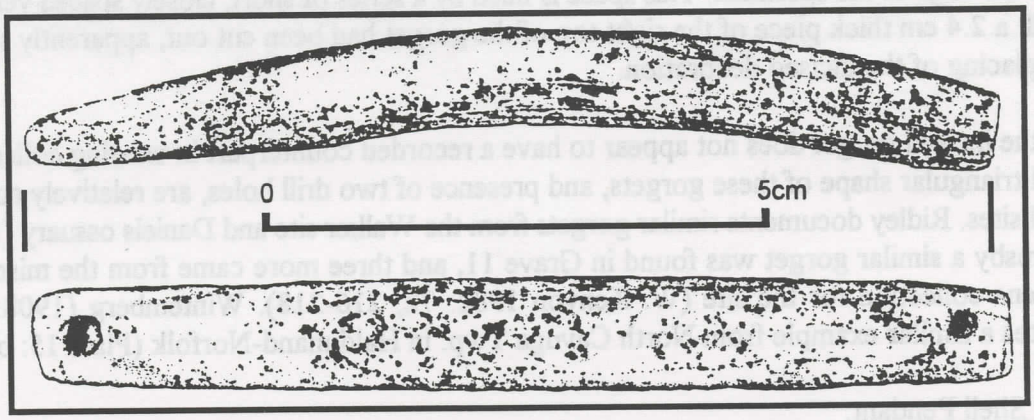

Figure 9: Side and Top View of One of the Columella Ornaments From the Milton Heights Site. Drill hole on the right connects with a hole drilled in from the end of the piece.

Table 3
Milton Heights Marine Shell Columella Ornament Measurements
(measurements in gr and cm)

				Drill Hole Diameters		
#	Length	Width	Thickness	Left	Right	Weight
1	8.85	1.20	0.96	0.20	0.21	17.8
2	9.40	1.34	1.10	0.31	0.21	21.1

Marine Shell Beads:

Certainly the most abundant artifact category from Milton Heights consisted of marine shell beads. A total of 3438 beads were recovered through excavations and soil flotation, or 99.3% of the entire artifact assemblage.

As mentioned earlier, marine shell beads begin appearing within Neutral habitation and mortuary contexts in the 16th century, increasing substantially after about AD 1580 (Lennox and Fitzgerald 1990). While there is no lack of archaeological and ethnohistoric data suggesting the importance of shell beads as ornamental objects among the Great Lakes Iroquoian peoples, specific references to Neutral use of shell are lacking. Generally, shell beads adorned many parts of the body as necklaces, bracelets, earrings, head garb, and so on; were used as inlay on wood objects; woven into cloth and hide clothing; etc. (Karklins 1992). Sagard, in describing Huron appearance, refers to shell beads strung into necklaces, measuring up to 3½ feet in circumference, worn by women around their necks. They were also strung together in smaller quantities, worn as bracelets or from ears, or chains of large beads "as big as walnuts," were worn as loose belts wrapped around the hips (1939: 144). Another account from Huronia refers to a captured Iroquois warrior wearing a string of porcelain (shell) beads around his neck, and one in the form of a crown on his head (Thwaites 1896-1902, 13:39). Radisson, as a captive among the Mohawk, reports being dressed in bracelets and garters of shell beads, wearing necklaces that hung down to his feet, and having his hair braided with shell beads (Scull 1967: 40). Many other accounts of the use of shell beads, primarily as personal ornaments exist (see Karklins 1992 for a review; see also Wintemberg 1908: 63-65). These records suggest that men, women and children all wore these various shell bead ornamental forms.

Archaeological evidence from Neutral sites suggest that the various shell bead ornamental forms observed for other Iroquoian groups historically were similar fashions for the Neutral. For example, at the Grimsby burial site (W. Kenyon 1982) most of the common shell bead uses were noted: hair braiding with shell beads and/or head gear (Grave 1?, 9, 36, 46?, 58); necklaces (Grave 1?, 9?, 11?, 14, 20, 30, 46, 49, 52); bracelets (Grave 11?, 18?, 62); arm bands (Grave 9); earrings (Grave 46?, 50, 58, 62); belts (Grave 9?, 46?); anklets or leg ornamentation (Grave 14, 46); and shell beads inter-

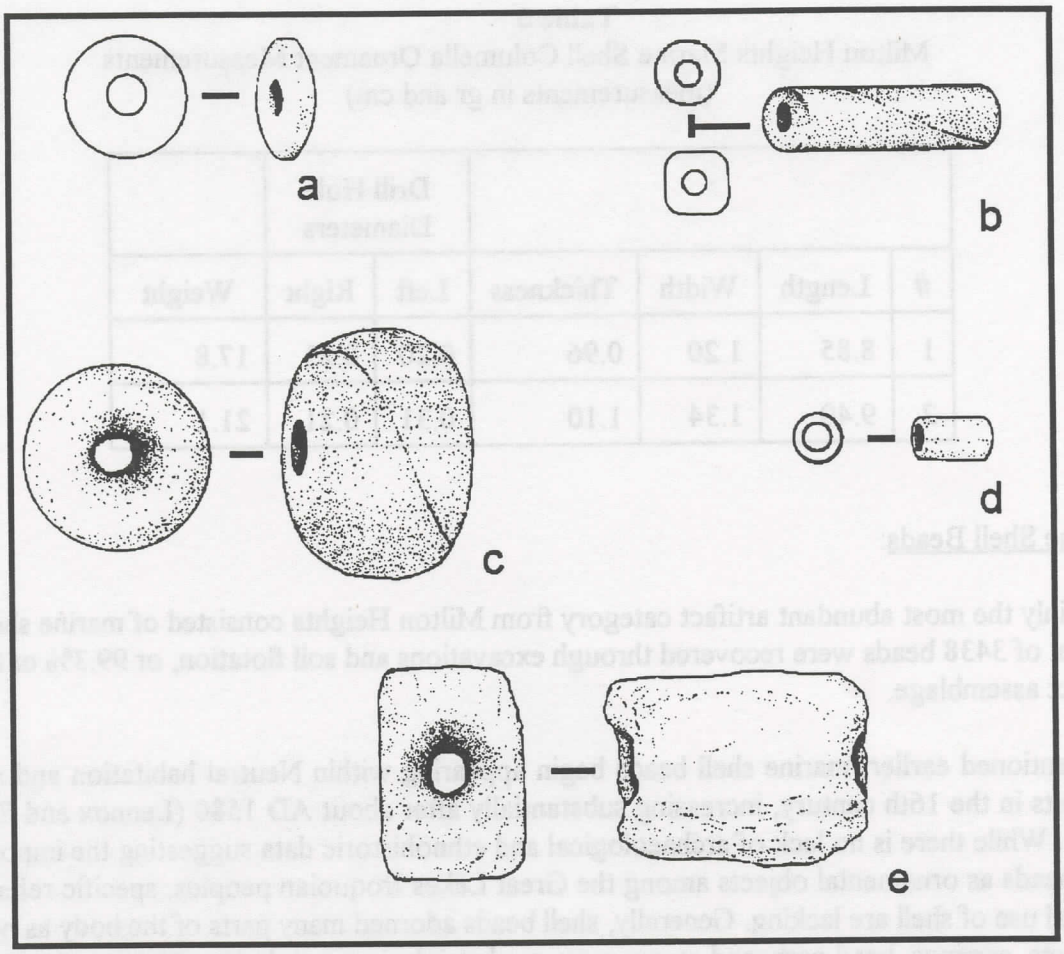

Figure 10: Stylised (oversized) Depictions of Shell Bead Types Recovered From Milton Heights. A- Discoidal. B- Tubular (depending on degree of grinding, these beads can be circular to square-shape in profile). C- Globular (also known as rounds or nuts). D - Wampum. E- Cubic (while some of these beads can be cube-shaped, the example illustrated above is flat and rectangular, and is sometimes referred to as a runtee). Illustrations adapted and modified from Wray et al 1987 & 1991.

woven into matting (Grave 36). At the Hood site, an infant burial contained articulated shell bead work around the chest, which may have been part of some clothing, or a necklace (Fitzgerald 1979: 47). At the Shaver Hill ossuary, a three-rowed discoidal bead necklace was found around the neck of an infant burial (Stothers 1972: 36). As well, large numbers of shell beads (sometimes reported as being found in strands) have been observed at the Carton site (Jamieson 1981), Shaver Hill (Stothers 1972; Fitzgerald 1979), and from the Cooper site (Warrick 1983). Finally, it has also been reported that shell beads have been found scattered or sprinkled across a burial, suggesting that they were also used as a general grave good without a specific ornamental function (W. Kenyon 1982; Ridley 1961: 29).

Unfortunately, the way materials were recovered from Milton Heights meant it was not possible to observe whether or not shell beads were placed in the burial pit as articulated ornamental forms. Although observed in the exposed profiles of the pit were at least two articulated or "stringed" clusters of discoidal shell beads.

All the shell beads recovered from Milton Heights were measured for width/diameter, length/thickness, and drill hole diameter. Some beads also warranted a fourth measurement for thickness. These measurements were included as an appendix to the artifact analysis report undertaken for the collection (Ferris 1987). For the purpose of analysis, beads were classified according to visually identifiable and metrically distinct types, corresponding roughly to the types identified in Fitzgerald (1982b: 28).

Discoidal Shell Beads (Figure 10.a) -

Discoidal beads are thin, round discs of shell, drilled in the centre from either one or both sides. This is the most abundant bead type in the collection, numbering 3113 (90.5%). That the bead assemblage from Milton Heights is so dominated by discoidal beads is unusual. Only the McClellahan ossuary (also know as Milton ossuary no. 2) is similar, with discoidal beads making up 96.7% of the shell bead assemblage (Reid and Conway 1976: 32). Unfortunately, that assemblage was recovered following extensive looting of the site, thus limiting its comparative usefulness.

It has been suggested that discoidal beads were manufactured from whelk columellae (Wintemberg 1908: 53). The idea is that the columella would be "sliced" into thin sections, providing discoidal blanks that were then drilled. However, no discoidal bead from the Milton Heights site reflected the tell-tale columella swirl on its edge. While this could have been removed through subsequent polishing or wear, certainly some evidence of a swirl would still have been expected on a few of the larger (+15 mm) specimens. Moreover, many of the discoidal beads from Milton Heights exhibited outside shell cortex, which could only have come from the outer body whorl of the whelk.

So, while a few discoidals could have been made from columellae, most of the discoidal beads were likely manufactured by a method referred to as the heishi technique (Francis 1989: 31; see also Orchard 1929: 26-27). This method consists of making beads from the outer shell of a whelk or bivalve. Blanks are chipped out of the shell, and if thick enough are sectioned into two or more blanks. After this the blanks are drilled and then strung on a string, held tight, and rolled over a flat or grooved abrader, such as a stone. Water and grit can be added to help the process. By this method a string of similarly sized discoidal beads is manufactured in a short time.

Discoidal bead measurements from Milton Heights were plotted onto a frequency/diameter graph (Figure 11). This graph illustrates a remarkably similar frequency of beads between each of the 6 mm through to 15 mm increment. This general uniformity would tend to confirm the notion that most of the discoidal beads were manufactured following the heishi technique (Francis 1989: 31).

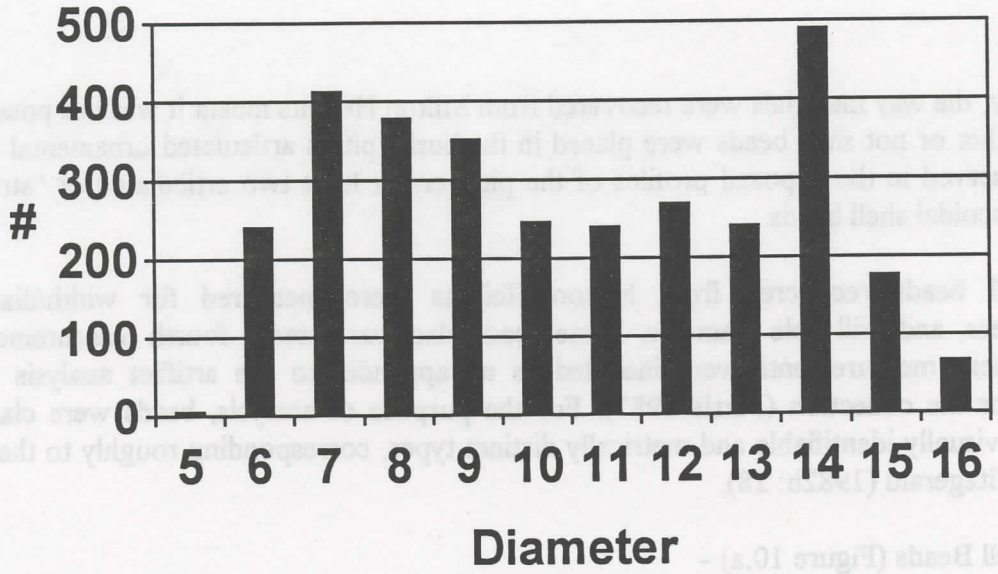

Figure 11: Discoidal Shell Bead Diameter Bar Graph. Increments are 1 mm.

Despite the overall uniform range observed in Figure 11, two higher bead frequencies are noticeable at either end of the scale (7-9 mm and 14 mm). Such a bi-modal clustering of bead has been noted at other Neutral cemetery sites, including Cooper (Warrick 1983: 42), Carton (Fox pers. comm.) and Walker (Wright 1981: 114).[1] Curiously, however, these collections do not demonstrate the same relatively high frequencies of beads between the two extreme clusters, as is the case with the Milton Heights collection. In fact there tends to be few or no beads in these middle ranges. To date, only the Meisner cemetery discoidal bead assemblage exhibited a similarly high frequency of beads between the higher frequencies at either end of the diameter range (Fox pers. comm.).

It has been noted on habitation sites such as Hamilton (Lennox 1981: 300) and Christianson (Fitzgerald 1982a: 215) that discoidal shell bead diameters tended to cluster much more tightly, and around the lower (i.e. 7 mm) end of the range. This has led Warrick to argue that the size distinction of shell discoidal beads between habitation and cemetery sites is due to a notion of "Primitive Valuables." This variant of the "Bigger is Better" principle assumes that small beads were solely of ornamental value, while strings of large discoidal beads were much more highly valued, and thus more carefully curated during use, and eventually more preferred and thus more lavishly deposited in graves. To Warrick (1983: 49), this explained the lack of large beads on habitation sites, and the greater concentration of them on cemetery sites. The Milton Heights data, however, does not support this idea, with relatively equal quantities of beads represented in most of the 1 mm increments depicted in Figure 11. Indeed, just under 50% of the beads in the Milton Heights collection were 10 mm or less.

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1 Although at Walker the large-sized bead cluster is slight, and there is no indication in the report if these beads came from the cemetery or habitation portion of the site.

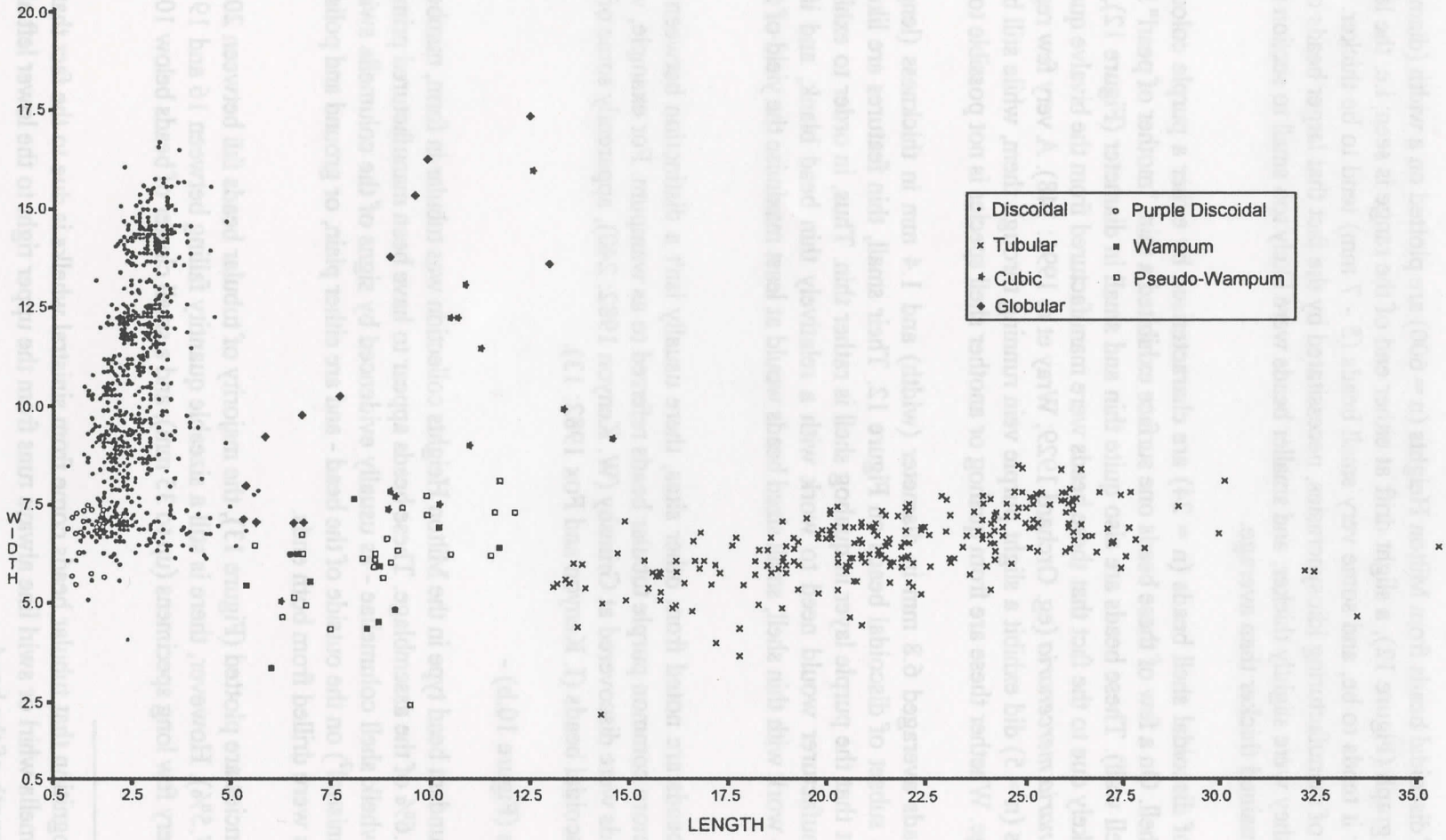

Figure 12: A Width (Diameter) - Length (Thickness) Chart For All Shell Bead Types At Milton Heights. Measurements are in mm. For clarity sake, only 600 (20%) of the discoidal assemblage is depicted, comprising the entire collection of discoidals made during the July fieldwork (both field and flotation recoveries).

When a selection of discoidal beads from Milton Heights (n = 600) are plotted on a width (diameter) / length (thickness) graph (Figure 12), a slight drift at either end of the range is seen; i.e. the larger the bead the thicker it tends to be, and some very small beads (5 - 7 mm) tend to be thicker. This likely is a reflection of manufacturing idiosyncrasies, necessitated by the fact that larger beads could not be made unless they were slightly thicker, and smaller beads were likely too small to section them further, so some remained thicker than average.

A distinct number of discoidal shell beads (n = 24) are characterised by either a purple colour or purple layer in the shell. On a few of these beads one surface exhibited a thin, "mother of pearl" layer (i.e. interior of a shell wall). These beads are also quite thin and small in diameter (Figure 12), and their purple hue is likely due to the fact that these beads were manufactured from the bivalve quahog shell species, *Mercenaria mercenaria* (eg. Orchard 1929; Wray et al 1991: 148). A very few regular discoidal shell beads (n = 5) did exhibit a slight purple vein running through them, while still being rather thick and large. Whether these are from quahog or another shell species is not possible to tell.

Purple discoidal beads averaged 6.8 mm in diameter (width) and 1.4 mm in thickness (length), clustering as a tight subset of discoidal beads on Figure 12. Their small, thin features are likely a reflection of the fact that the purple layer in quahog shell is rather thin. Thus, in order to exhibit a purple hue the manufacturer would need to work with a relatively thin bead blank, and if the manufacturer had to work with thin shell, small sized beads would at least maximise the yield of these beads.

While purple shell beads are noted from other sites, there usually isn't a distinction between thin discoidals, and the more common purple tubular beads referred to as wampum. For example, while 198 purple shell beads were discovered at Grimsby (W. Kenyon 1982: 240), apparently some of that number included discoidal beads (I. Kenyon and Fox 1982: 13).

Tubular Shell Beads (Figure 10.b) -

The second most abundant bead type in the Milton Heights collection was tubular in form, numbering 261 specimens, or 7.6% of the assemblage. These beads appear to have been manufactured primarily from cut pieces of whelk shell columellae - as usually evidenced by signs of the columella swirl or whorl (exclusively sinistral[2]) on the outside of the bead - and are either plain, or ground and polished. Most of these beads were drilled from both ends.

When length frequencies are plotted (Figure 13), the majority of tubular beads fall between 20 and 26 mm in length (57.5%). However, there is still a sizeable quantity falling between 16 and 19 mm (18%) as well as a very few long specimens (up to 35 mm), and a small cluster of beads below 10 mm (7.7 %).

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[2] Recognition that tubular beads come from sinistral whelks is due to the fact that the columella whirl or swirl line always runs from the upper right to the lower left along the length of the bead.

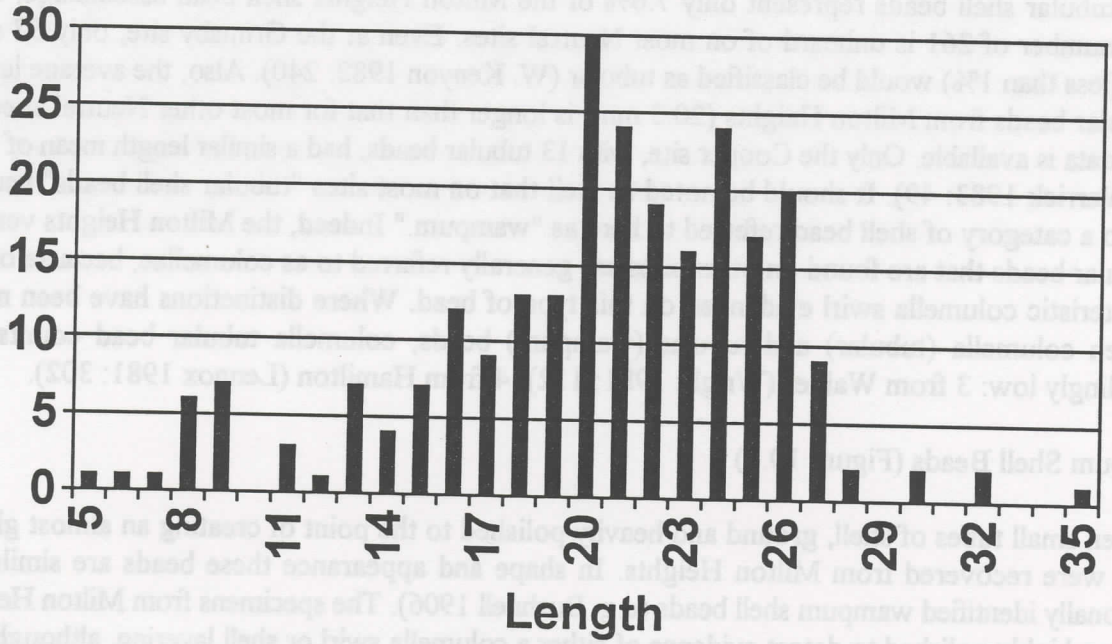

Figure 13: Tubular Shell Bead Length Bar Graph. Increments are at 1 mm. Note: fragmentary beads were not included in this graph.

For the most part, tubular beads are plain, drilled pieces of the columella. However, a few specimens (n = 47) do exhibit a high degree of grinding and polishing, 64% of which measured between 23 and 26 mm in length. These specimens have ground or polished ends and exhibit small, narrow drill holes. The grinding and polishing leaves these beads with a distinctive cylindrical or square cross section. That most of these beads cluster between the 23 and 26 mm length (40% of all tubular beads within this measurement range) probably reflects the fact that a longer, thicker blank is needed to manufacture a polished product. Whether this visually distinct subset of the tubular bead form is significant or not, however, requires the recovery of these items *in situ*, to see if their use is distinct from the plainer form. Also worth noting is that a small number of these ground and polished beads also exhibited an hourglass shape due to bevelling in the centre of the specimen, perhaps as a result of the incomplete manufacture of one bead into two smaller beads.

On Figure 12, length and width measurements for tubular beads reflect an expected pattern, in that longer beads are also wider. At the short end of the bead range, however, are a number of beads that are exceedingly short and squat (identified as "pseudo-wampum" on the chart). Most of these beads are less than 10 mm in length and separate out from regular tubular beads, clustering closely with the wampum variety of shell bead (Figure 12). Indeed, it has been suggested that these distinct, squat tubular beads may have been made to imitate European manufactured wampum (hence the "pseudo-wampum" label). Outside of their shape, however, they appear to be regular tubular beads, being either plain, or ground and polished. It may be that these beads are simply from either end of regular tubular beads - "wasters" created in the manufacturing process (Fitzgerald 1982b: 198-199).

While tubular shell beads represent only 7.6% of the Milton Heights shell bead assemblage, their actual number of 261 is unheard of on most Neutral sites. Even at the Grimsby site, only 57 shell beads (less than 1%) would be classified as tubular (W. Kenyon 1982: 240). Also, the average length of tubular beads from Milton Heights (20.3 mm) is longer than that for most other Neutral sites for which data is available. Only the Cooper site, with 13 tubular beads, had a similar length mean of 19.5 mm (Warrick 1983: 49). It should be noted as well that on most sites "tubular shell beads" usually refer to a category of shell bead referred to here as "wampum." Indeed, the Milton Heights version of tubular beads that are found on other sites are generally referred to as columellae, because of the characteristic columella swirl evidenced on this type of bead. Where distinctions have been made between columella (tubular) and tubular (wampum) beads, columella tubular bead counts are exceedingly low: 3 from Walker (Wright 1981: 112); 4 from Hamilton (Lennox 1981: 302).

Wampum Shell Beads (Figure 10.d) -

Thirteen small tubes of shell, ground and heavily polished to the point of creating an almost glossy finish, were recovered from Milton Heights. In shape and appearance these beads are similar to traditionally identified wampum shell beads (e.g. Bushnell 1906). The specimens from Milton Heights were too highly polished to detect evidence of either a columella swirl or shell layering, although size and thickness suggest these specimens were likely made from whelk columellae.[3] Average length was 8.5 mm and 5.6 mm in width (diameter). When plotted onto the width/length graph, these beads fall into a range between both discoidal and tubular beads (Figure 12). Their placement on this graph suggests that wampum was a distinctive bead type whose size and shape may have allowed for uses that could not be filled by either discoidal or tubular bead types.

The number of wampum beads from Milton Heights is quite small when compared to two other Neutral cemeteries. At the Cooper site a total of 1,233 wampum beads were recovered (Warrick 1982: 49), while at Grimsby the 887 wampum (cylindrical) beads recovered represented 13.9% of the site's shell bead collection (W. Kenyon 1982: 240). On the other hand, at the Tregunno cemetery (I. Kenyon 1986), only 3 shell wampum pieces were recovered, although construction disturbance to the site limited overall findings.

It is also interesting to note that, when compared to other Neutral sites, the Milton Heights wampum pieces are still quite large. At the Hood site the average length and width for 127 wampum (tubular) beads was 5 and 4 mm respectively (Lennox 1984: 98). At Hamilton, 42 beads averaged 6.4 and 4.3 mm (Lennox 1981: 300-301). The Walker collection of 21 pieces averaged 6.5 and 4.5 mm (Wright 1981: 112), while at the Cooper site the average length and width were 4.8 and 4.0 mm (Warrick 1983: 49). Additionally, the Milton Heights beads are larger than even the "Early Wampum" bead variety identified on New York State Seneca sites, which are thought to represent a relatively early, cruder variant of wampum (Ceci 1989: 72; Wray 1973; Wray et al 1987: 137, 216, 1991: 150, 346).

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[3] Later on, wampum would become increasing popular and manufactured by Europeans almost exclusively from quahog and other bivalves, creating the distinctive purple or "black" wampum that lasted into the 19th century.

While the Milton Heights assemblage is too small to draw any meaningful conclusions, it may be that these specimens represent a relatively early wampum form.

Globular and Cubic Shell Beads (Figure 10.c,e) -

Globular (n = 13) and Cubic (n = 14) bead types collectively represent 0.78% of the Milton Heights shell bead collection. Globular beads (also referred to as Rounds, Massive, or Nuts) are large, thick and round. Cubic beads are also large and thick. This category includes both very cubic beads (looking like an unscored member of a pair of dice), and more tabular forms, rectangular and relatively flat in shape. This latter form of cubic bead has also been referred to as Runtees (Wintemberg 1908: 82), and may be equivalent to the Barrel-Shaped beads noted on early Seneca sites (Wray et al 1987, 1991). Both cubic and globular beads exhibited signs of the columella swirl or whirl (exclusively sinistral), that confirms that they were made from the central portion of the marine whelk. All Milton Heights specimens were biconically drilled.

When plotted on the graph in Figure 12, both bead types exhibit a similar pattern: the longer (thicker) the specimen, the bigger the diameter (width). Worth noting is that the size range for both bead types fit along separate, 45° lines up the graph, skirting either side of what would be the 1:1 ratio line; globular beads sitting just on the circular side of that line, while cubic beads sit just to the tubular side. As with most of the other bead types, these categories occupy a separate dimensional area of the graph, and likely served a specific ornamental purpose, either as individual objects (earrings, etc.), or a separate part of a composite item (necklace, etc.).

Similar beads have been found elsewhere. W. Kenyon (1982: 240) reports a total of 27 "rectangular flat" (runtees) shell beads from Grimsby. The McClellahan site had upwards of 13 cubic beads (Reid and Conway 1976: 32). Two runtee (cubic) beads were recovered from Hamilton (Lennox 1981: 302), and two globular beads were recovered from Christianson (Fitzgerald 1982a: 214-215). Also according to Fitzgerald (1982c: 34), 1 globular and 4 tabular (cubic) beads were recovered from the Shaver Hill cemetery. Variants of particularly globular beads are also found on early Seneca sites (Wray et al 1987, 1991). With the exception of the Hamilton examples, these bead types do not seem common on late Neutral sites.

DISCUSSION

The Milton Heights cemetery is an interesting but problematic site. The lack of many classes of artifact from the ossuary pit creates challenges to interpreting the site, chronological associations, etc. Likewise, the lack of good published data for the historic Neutral sites in the Milton area make it difficult to understand how Milton Heights fits into the regional context. Nonetheless, though inferential and limited, some discussion about the site can be offered.

Chronological Placement

Any meaningful consideration of the findings from Milton Heights must start with a determination of age. Certainly for the historic end of the Terminal Woodland in the Great Lakes a detailed chronological sequence has been devised, primarily based on observed patterns of glass beads types and frequencies appearing on sites, and combined with an understanding of the industrial chronology of bead production in Europe (I. Kenyon & T. Kenyon 1983; I. Kenyon & Fitzgerald 1986). While a detailed review is not required here, suffice to say that very specific types of glass beads are present or absent on sites spanning ca. AD 1580-1650, due to changing economic, manufacturing and trade patterns in both Europe and northeastern North America. Research has defined three broad chronological periods: Period I has been assigned a date of ca. AD 1580 - 1600; Period II between 1600 and somewhere in the 1615-1625 range; Period III between 1625 and 1650, although an increase in red tubular glass beads somewhere around the late 1630's further divides Period III into IIIa and IIIb (I. Kenyon and T. Kenyon 1983: 68). Only minor differences in opinion still exist regarding the end of Period II: either 1615-1625 (I. Kenyon 1984), or 1628-1632 (Fitzgerald 1983; 1990).

With such sensitive chronological indicators available, researchers working on historic Iroquoian sites can rely on the presence-absence of certain glass beads to assist in determining a chronological placement for their material. Unfortunately, at Milton Heights the four glass star beads recovered are not sensitive to time change, and are common throughout most of the 17th century. Likewise, while there is a lack of substantial quantity of European-manufactured items, which could be argued to suggest the site is quite early, there is in fact a paucity of everything but marine shell at Milton Heights. Frustratingly, from a research perspective, is that it also can't be said that the under-represented artifact categories were absent from Milton Heights, since they may well remain in the undisturbed bulk of the ossuary pit, snickering quietly to themselves.

There are inferential data available to suggest a date for Milton Heights, however. Fitzgerald (1988; 1990) has argued that the iron band kettles found at Milton Heights are likely a Period I (i.e. pre-1600) artifact type. This argument is based on the fact that these kettles are found in association with diagnostic Period I beads in Nova Scotia (Fitzgerald 1990: 413). Fitzgerald (1988, 1990; Fitzgerald and Ramsden 1988; Lennox and Fitzgerald 1990), has gone on to argue that there was a change in the quality of trade goods appearing on Aboriginal sites following the commercialisation of the fur trade (i.e. post 1600). Prior to 1600, Europeans primarily traded goods generally available in Europe, such as the iron band kettles. Afterwards, however, varieties of kettles (such as the cut lug variety) and other items manufactured explicitly for the fur trade were of a lesser quality, made from inferior metal compositions, etc. As such, the relatively high quality of the copper kettles from Milton Heights argues that the site dates to Period I.

However, while I have no quarrel with the general argument Fitzgerald has put forth about changing trade goods quality, it has limited use in ascribing Milton Heights to Period I. For example, the only other iron band copper kettle found in Ontario came from Grave 11 of the Grimsby site (W. Kenyon 1982), which has been dated by glass bead varieties to the transition between Period II and Period

IIIa (I. Kenyon and Fox 1982: 8). Fitzgerald suggests the Grimsby example is worn, brittle, and as such is a kind of heirloom, buried long after it was obtained. Whether or not that can be confirmed, I am left with the fact that the only other Ontario example of an iron band kettle was placed in a similar ossuary pit in the mid 1620's. So, while the presence of iron band kettles may offer an inference that Milton Heights pre-dates Period III, it isn't viable to suggest the kettle confirms a Period I date for the site.

The catlinite beads can also offer a further inference on age, since catlinite is only introduced into southern Ontario sometime around 1615-1620 (Fox 1980). The unusual form of the beads at Milton Heights (i.e. fat discoidals) limits any comparisons with other assemblages, however (with the one exception from the Grimsby Cemetery noted below).

It is also worthwhile noting that the Period II Christianson site was the only other historic Neutral site to yield a high quantity of copper bracelets similar to those from Milton Heights.

The marine shell assemblage from Milton Heights can also offer some general inferences on age. Certainly the large quantities of shell on Neutral sites is a post AD 1580 phenomenon. At Milton Heights, The paucity of wampum, and the relatively large size of the specimens present, is distinct from Period III Neutral sites, where small-sized wampum is a major shell bead type. However, three pieces of wampum were recovered from the Period I Tregunno cemetery. As well, that close to 200 early wampum specimens were recovered from the Period I Adams in western New York state (Wray et al 1987: 141) limits any tight chronological placement of Milton Heights as a result of a small quantity of wampum.

Discoidal shell beads from Milton Heights exhibited a wide range of size categories, with opposite ends of the range exhibiting even greater quantities. Other Neutral sites with sizeable discoidal shell beads do not exhibit this characteristic. Rather, they either have a single greater cluster of beads around the small end of the size range (roughly 7 mm), or are characterised by a bi-modal cluster at opposite ends of the size range, with few beads in-between. This is true of Period III sites (Cooper, Hamilton, Hood, Walker), and is apparently also true of Period I sites such as Tregunno and Carton (Fox pers. comm.).[4] Only the Miesner site (Period II) exhibited a similar discoidal bead diameter frequency range as seen at Milton Heights (Fox pers. comm.).

An additional inference on the age of the Milton Heights site comes from a comparison of Grave 11 at the Grimsby site (W. Kenyon 1982: 59-76). While this grave contained a wide assortment of items not found at Milton Heights, it did contain the only other Ontario example of the iron band copper kettle and only other example of the catlinite beads found at Milton Heights. Grave 11 also contained comparable varieties of shell bead types, and contained columella ornaments, a shell gorget and a shell pendant all comparable to the Milton Heights examples. As mentioned earlier I. Kenyon and Fox date this Grave to the Period II - Period III transition (1982: 8).

[4] Although Fox suggests that the Carton site in particular may have a greater emphasis on large discoidals while Period III sites have a greater emphasis on small discoidals.

From the preceding discussion it seems reasonably safe to assume that the Milton Heights site pre-dates Period III (i.e. prior to 1625-1630). And, if one accepts that the iron band kettle is early, but that catlinite first appears on southern Ontario in the second decade of the 17th century, it is reasonable to suggest that Milton Heights likely dates to sometime during Period II. As well, more speculatively, the catlinite and kettle data, the similarities with Grave 11 from the Grimsby cemetery, and the marine shell assemblage could all be used to form a very cautious, tentative argument that the cemetery was most likely active between the 1610 and 1625 time span (latter part) of Period II.

The exercise in trying to date the Milton Heights site, hampered by the lack of definitive artifactual dating aids such as glass trade beads, has proven useful in considering artifact classes not generally reliable as chronological markers. Certainly Fitzgerald (1990) has demonstrated that many European trade goods reflect changing economic strategies, and as such, also reflect chronological change. Unfortunately, the marine shell artifact assemblage proved less useful in dating the site. However, it was certainly evident during the literature review for this study that, outside of noting overall quantity, little analysis of marine shell collections has been undertaken for Neutral sites. It may be with time and further analyses of collections that this exotic trade good will prove as useful a marker as European manufactured goods.

The Marine Shell Assemblage

And what of the marine shell artifact assemblage from Milton Heights? A general impression of the collection is that it is a reflection of an industry during the "heyday" of its craftsmanship. Not only is there a large quantity of shell artifacts from the cemetery, which presumably is a reflection of popularity, but the variety of shell bead forms and artifact types also suggests an abundance of raw material. Indeed, the presence of tubular beads and other large bead forms suggests a lack of concern over the production of these relatively "wasteful" varieties.

As well, it certainly is seductive to see a connection between the abundance of shell beads on this probable Period II site, the fact that relatively easy access to large quantities of glass trade beads did not occur until the start of Period III, and the fact that shell bead varieties found on Period III sites seem restricted to wampum and discoidal types. These three observations may suggest, at least to me, that shell bead varieties were losing out in a fashion competition with their glass bead counterparts. As a result, by Period III perhaps the time and shell needed to manufacture large tubular, globular and other massive beads began to be perceived as unnecessary and too costly.

Nonetheless, despite the decline in larger shell bead varieties, it's important to note that discoidal shell beads continued to be present on later sites in quantity during Period III. This may suggest shell bead makers directed efforts towards exclusive production of discoidal shell beads. Also, the more restricted concentration of discoidals around the small end of the diameter range seen on many Period III sites may also suggest an increased standardisation in the production of discoidal beads. While I realise this is nothing more than conjecture, it is interesting to note that discoidal shell beads, the only shell bead form never to have a glass bead counterpart, remained popular throughout the first half of the 17th century in the Northeast.

Finally, some discussion of the Milton Heights site in relation to other known contact era Neutral sites in the Milton area is necessary - necessary though difficult given the surprising paucity of published data despite the extensive investigations which have taken place on Neutral sites in this area over the years.

Milton Heights is located below and immediately northeast of the Milton Heights formation of the Niagara Escarpment. To the north of the Milton Heights site are another four or five reported Neutral sites, mostly along the Middle Sixteen Mile Creek (Noble 1978: 154; Lennox and Fitzgerald 1990: 412; Reid and Conway 1976; see Figure 1). Traditionally, archaeologists have lumped these sites together, referring to them as the Milton Cluster (Lennox and Fitzgerald 1990). Noble (1978: 163, Note 5) has suggested that these sites may represent a distinct tribal grouping, identified as the *Annochia(ronon)* in the DuCreux map of 1660. And while contact era Neutral sites also have been reported south of the Milton Heights Formation by the Bronte Creek Gap in the Escarpment (e.g. a 17th century component reported from the Pipeline site; the probable Period III Borscok site; etc. - Poulton 1993: 51 and pers. comm.), these sites tend to be lumped separately as part of a Spencer-Bronte Creek cluster of Neutral sites, including Hamilton, Hood, Dwyer, Christianson, Tregunno, etc. (Noble 1978; Lennox and Fitzgerald 1990; see Figure 1).

The Milton Cluster of sites has not received a great deal of published detail. For example, the Carton site, excavated in the 1960's by Dean Axelson, consists of a habitation and cemetery, including an ossuary containing the remains of 250 individuals. According to Halpren, who analysed the skeletal material from Carton, these individuals were found with "strings of discoidal and tubular shell beads, tubular brass beads, glass trade beads, brass armbands, corded wire, 35 or more brass rings, and two brass pendants" (as quoted in Jamieson 1981: 24). Carton is believed to be a Period I site (I. Kenyon and T. Kenyon 1983). The Brown site was excavated as a result of an Erindale College field school from the University of Toronto in 1970, and is thought to be a Period II site (Fitzgerald pers. comm.; I. Kenyon pers. comm.). The McCarthy site is reported to have yielded some quantities of red tubular glass beads, along with a host of other materials, although the whereabouts of the collection is presently unknown. The red tubular glass beads suggest this site dates to Period III. The McClellahan ossuary is characterised by a lack of diagnostic or chronological indicators, although a large number of marine shell artifacts and a few European-manufactured items would confirm that it dates to the contact era (Reid and Conway 1976). It is likely associated with the Milton Village site, of which little is known. The general pattern observed from these sites, albeit based on sketchy evidence and assuming some kind of community association, is a north and east movement through time from the Carton site, to the Brown site, to McCarthy.

Milton Heights, if indeed dating to Period II, doesn't readily fit into the temporal movement suggested by the other known Milton area sites. If, as Fitzgerald has suggested, Milton Heights dated to Period I, then it would better "fit" the Milton sequence. But who's kidding whom? The paucity of published data for the entire Milton cluster precludes any meaningful discussion about community sequences of occupation. As seen elsewhere in Neutralia, the Milton cluster may actually consist of two village

movement sequences, and Milton Heights simply belongs to an all but unknown village sequence at present. Or, given the substantial amount of Neutral occupational data that has been documented in recent years (e.g. W. Finlayson, pers. comm.), maybe the entire traditional notion of contact era Neutral sites located along the northeastern part of Bronte Creek being lumped together with west Bronte Creek and Spencer Creek Neutral sites should be re-evaluated. Indeed, perhaps there was actually a north-south alignment of Neutral sites, following the base of the Niagara Escarpment and associated with the Sixteen Mile Creek *and* northeastern Bronte Creek drainages. This would then connect sites like Richardson, Pipeline and Borscok with the Milton cluster. There's no end to the speculative discussion that can occur, particularly for the Neutral sites around the Escarpment north and south of Milton Heights. The lack of accessible data most of the excavated sites in this area ensure discussion must be largely speculative.[5] What can be stated now, however, is that traditional notions of Neutral community boundaries in the northern end of Neutralia perhaps rest on less than solid footing.

Concluding Comments

Milton Heights proved to be a distinctive historic Neutral cemetery, characterised by a central ossuary pit and a number of peripheral burials. While this pattern has been observed elsewhere at Neutral ossuaries (Noble 1978: 160), the artifact assemblage from Milton Heights was rather unique, lacking a wide assortment of expected artifact classes, and an abundance of marine shell artifacts. While a challenge to date, inferentially a Period II assignment has the best set of "legs" to stand on. Providing meaningful interpretations was also a challenge, not only because of the unfortunate way in which the site was discovered and how events subsequently unfolded, but also because excavations were prohibited from examining intact portions of the ossuary pit or fully documenting the other burials present. While current realities necessarily lead to limited examination of places of human interment, Milton Heights demonstrates the frustrating limitations to documentation and knowledge such contingencies create.

Nonetheless, the material recovered refused to simply be a laundry list of goods that happened to spill out of a backhoe bucket one day. At the very least, the data from this site raises a host of questions about our knowledge of the Milton area Neutral occupation, and demonstrates that artifact classes sometimes overlooked on sites with plenty of ceramics, glass trade beads and other "primary" categories, still have the potential to inform our understanding about a wide range of past social and economic activities.

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5 Although Bill Finlayson reports that his efforts to review and present a host of data available for this region will soon be completed in a substantial publication. This presentation of data will certainly be welcome and should help reduce the degree of speculation currently used when discussing sites from the Milton area.

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